

~~METHODS AND KITS FOR DETECTING ENZYME ACTIVITY~~METHOD FOR
CHEMICAL TRANSFORMATION
USING A MUTATED ENZYME

ABSTRACT OF THE DISCLOSURE

~~A method of screening enzyme sources for desired enzymatic activity and a kit containing components for performing the method according to the invention is provided. The method comprises contacting the enzyme, preferably an oxidoreductase, with a composition comprising a target compound, and preferably a pH indicator and optionally a cofactor, and thereafter determining whether there is a change in the pH of the composition. The kit comprises a material to be screened containing an enzyme, a container, and a pH indicator. In a preferred embodiment, the kit comprises a plurality of containers, a material to be screened containing an enzyme in each container, and a pH indicator, which can be in a separate container from the containers holding the enzymes or in each container with each enzyme, and optionally a cofactor.~~

Methods for chemically transforming compounds using a mutated enzyme are provided, and more particularly a method for the production of an amino acid from a target 2-ketoacid, the production of an amine from a target ketone and the production of an alcohol from a target ketone. The methods comprise creating a mutated enzyme that catalyzes the reductive amination or transamination of the target 2-ketoacid or ketone or the reduction of the ketone and providing the mutated enzyme in a reaction mixture comprising the target 2-ketoacid or ketone under conditions sufficient to permit the formation of the desired amino acid, amine or alcohol to thereby produce the amino acid, amine or alcohol.